a' cont.

with respect to the contact surfaces, and therefore the inactive regions assigned to these, of the preceding internal electrode or a predetermined number of preceding same-internal electrodes of the same alignment.

21. A piezoceramic multilayer actuator according to Claim 20, wherein the offset is of such a size, as a multiple of the predetermined angle according to a predetermined height, and therefore a predetermined number of layers, comprising a layer of piezoceramic material with internal electrodes located thereon, and wherein at least the contact surfaces of the first and the last of the internal electrodes of the same polarity in this range no longer overlap.

22. A piezoceramic multilayer actuator according to Claim 20, wherein offset, as a multiple of the predetermined angle, according to a region of a predetermined height and therefore of a predetermined number of layers, comprising a layer of piezoceramic material with an internal electroder located thereon, is so large that the inactive regions of the first and the last of the internal electrodes of the same polarity in this region no longer overlap.

23. A piezoceramic multilayer actuator according to Claim 20, wherein offset is determined in a region of from about 0.5 mm to about 3 mm, corresponding to some 5 to 30 layers, which in each case consist of the piezoceramic material and the internal electrode located thereon.

24. A piezoceramic multilayer actuator according to Claim 23, wherein the offset is determined in a region of from about 1 mm to about 1.5 mm, corresponding to at least 10 to 15 layers.

25. A piezoceramic multilayer actuator according to Claim 20, wherein an offset is provided several times in succession in a multilayer actuator, depending on its size.

26. A piezoceramic multilayer actuator according to Claim 25, wherein the offset is reversed in the opposite direction in each case after the completion of one region or several regions, so that a wave-shaped run of the offsets is produced.

A' cont.

27. A piezoceramic multilayer actuator according to Claim 20, wherein the actuator has a circular cross-section.

28. A piezoceramic multilayer actuator according to Claim 27, wherein the external electrodes have a helical run at the connection of the contact surfaces of internal electrodes with the same polarity with a constant running offset of the contact surfaces.

29. A piezoceramic multilayer actuator according to Claim 20, wherein the cross-section surface of the actuator is a square, a rectangle, or a polygon.

30. A piezoceramic multilayer actuator according to Claim 29, wherein an external electrode runs over one side surface or, in particular in the case of a polygonal cross-section, over several side surfaces.

31. A piezoceramic multilayer actuator according to Claim 20, wherein the actuator has a through borehole along its longitudinal axis.

32. A piezoceramic multilayer actuator according to Claim 20,wherein pocket holes are provided at its ends.

33. A piezoceramic multilayer actuator according to Claim 20, wherein the head region and in the foot region of the actuator the internal electrode spacing increases from electrode to electrode towards the respective end of the actuator.

34. A piezoceramic multilayer actuator according to Claim 20, wherein the actuator is a constituent part for the control of an injection valve.

35. A method for the manufacture of a piezoceramic multilayer actuator according to Claim 20, comprising the steps of positing several internal electrodes of the same polarity, with co-aligned contacting surfaces for the external electrode, in each instance on a green film made of a piezoceramic material, wherein the internal electrodes of the same polarity are positioned on the subsequent green film with the respective offset in each case generated by a predetermined angle a to the position of the preceding electrode in order to obtain the

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offset of the contact surfaces wherein the corresponding internal electrodes of opposing polarity are located on the green films rotated through 180 degrees in each case, laying the green films of opposing polarity are then laid on top of one another to form a block, with the contact surfaces, and therefore the assigned inactive regions of one or of a predetermined number of electrodes of the same polarity, arranged above one another in the same direction, being arranged offset to one another by the predetermined angle a opposite the contact surfaces, and therefore the assigned inactive regions of the preceding internal electrode or a predetermined number of preceding electrodes of the same alignment and same polarity, and wherein the actuators are then prepared from this block.

36. A method for the manufacture of a multilayer actuator according to Claim 35, wherein the processing for shaping a multilayer actuator in the green state is conducted prior to sintering.

37. A method for the manufacture of a multilayer actuator according to Claim 35, wherein the processing for shaping a multilayer actuator is carried out subsequent to sintering.

38. A method for the manufacture of a multilayer actuator according to Claim 35, wherein subsequent to the sintering of the actuator, the sinter skin is left on its surface, and only ground are the regions for exposing the electrodes, at which the contact surfaces of the internal electrodes are connected to the external electrode.